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ABSTRACT

In 1984-85, Project BITEC was in the second year of a 3-year funding cycle at New Utrecht High School in Brooklyn, New York. The program provides courses in English as a second language (ESL), native language arts in Spanish, Italian, Chinese, and Vietnamese; and bilingual (mostly in Italian and Spanish) instruction in mathematics, science, and social studies. In addition, technical courses are offered. The project provided instruction and support services to 386 limited English proficient students from Latin America, China, Vietnam, and Italy. The major goal of Project BITEC is to increase the English proficiency of its students, while continuing their education through content-area bilingual courses. Title VII provided funds for the administrative and support services staff. All project staff members attend university courses aimed at improving their usefulness to the program and other development activities. Parental involvement is one of the project's non-curricular objectives. Its curriculum specialists achieved their objectives in developing guides for courses in computer and secretarial studies in all target languages, and are in the process of completing multilingual curricula for a course in industrial arts. During the 1984-85 school year, the project was not able to achieve its objectives for English reading achievement, but goals were attained in native language arts and content-area courses. (KH)

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NEW UTRECHT HIGH SCHOOL

PROJECT BITEC

1984 - 1985

OEA Evaluation Report

O.E.A. Evaluation Section Report

Robert Tobias, Administrator of Evaluation
Judith S. Torres, Senior Manager

Grant Number: GOO-830-2901

NEW UTRECHT HIGH SCHOOL

PROJECT BITEC

1984 - 1985

Principal: Michael Russo

Project Coordinator:
Joseph Rizzi

Prepared by the

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A SUMMARY OF THE REPORT

Project BITEC is in the second year of a three-year funding cycle. The project provides courses in E.S.L., native language arts in Spanish, Italian, Chinese, and Vietnamese, and bilingual (mostly in Italian and Spanish) instruction in mathematics, science, and social studies. In addition, there are a selection of courses in three major strands: industrial arts, secretarial studies, and computer/technical studies. The project provides instruction and support services to 386 limited English proficient students from Latin America (59 percent), China and Vietnam (25 percent), and Italy (14 percent). The project has a significant number of students born in the United States (approximately 158 or 41 percent of the total).

The major goal of Project BITEC is to increase the English proficiency of its students, while continuing their education through content-area bilingual courses. At present, Chinese and Vietnamese language and content-area instruction are offered by non-licensed consultants with the proper approval of the Board of Education. The project director has actively engaged in a major recruiting effort of bilingual content-area teachers, but has met with only relative success.

Title VII provided funds for the administrative and support services staff. All project staff members attend university courses aimed at improving their usefulness to the program; they also frequently attend school meetings, workshops, and lectures on pedagogic strategies and intercultural issues. In addition, the program has made parental involvement one of its non-curricular objectives. This is particularly important in the case of some of BITEC's migrant groups, who reportedly do not view education as a necessity or as a vehicle for upward mobility. Efforts by staff members to intervene with students who hold after-school jobs, which often interfere with their academic performance and attendance, has been hindered by the parents' strong faith in the work ethic. In addition, parents are reportedly suspicious of extracurricular activities and are reluctant to attend school meetings. The bilingual guidance counselor and bilingual paraprofessionals maintain direct contact with students and their families, and are familiar with their needs and concerns. In some cases, early drop-out has been avoided by finding the student summer or part-time jobs that can resolve financial needs. In addition some students, particularly those from Vietnam and Cambodia have suffered great dislocation and personal tragedies and are currently experiencing a lack of concentration and overall low school

performance. Despite these problems, program students are regarded by the school principal as hard workers who "provide a good example" for the mainstream students.

Project BITEC's curriculum specialists have successfully achieved their objectives of developing guides for courses in computer and secretarial studies in all target languages, and are in the process of completing multilingual curricula for courses in industrial arts. Project BITEC also promotes ethnic integration and cultural support through ethnic celebrations, field trips, the publication of an inter-ethnic school magazine, and school parties.

Program objectives were assessed in English language development (Stanford Achievement Test); growth in the native language (teacher-made examinations); mathematics, science, social studies, industrial arts, secretarial studies, technology/computers (teacher-made tests); and attendance and dropout (school and program records). Quantitative analysis of student achievement data indicates that:

-- Program students were unable to make significant gains in English reading achievement.

-- Students in all four language groups achieved the program objective of a 70 percent passing rate in native language arts courses.

-- Overall, the percentage of program students passing teacher-made examinations in content-area subjects was equal to or greater than that of mainstream students, thus meeting the program objective.

-- The objective of a 70 percent passing rate in computer science, secretarial studies, and industrial arts courses was achieved both semesters.

-- The attendance rate of program students was significantly higher than that of mainstream students, thus meeting the program objective.

The following recommendations are offered to improve the overall effectiveness of the program:

-- Continuing efforts to recruit bilingual teachers for content-area classes. Although the present use of bilingual paraprofessionals appears as an effective alternative, the discipline problems caused when members of two different language groups are in attendance interfere with instructional activities.

Where possible, the program might consider forming separate sections of classes based on the students' native language.

-- Providing more space to free the resource room (presently shared by the curriculum developer and administrative staff) for instructional activities.

-- Investigating the appropriatness of the instrument used to assess English reading and identifying an instrument that is more appropriate to measure the proficiency of students at varying levels of English proficiency.

-- Continuing attempts to contact parents and to stimulate their participation in school activities through meetings and classes.

-- Using available data, monitoring mainstreamed students systematically to enable the program to determine the effectiveness of its mainstreaming practice.

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The production of this report, as of all O.E.A. Bilingual Education Evaluation Unit reports, is the result of a cooperative effort of permanent staff and consultants. In addition to those whose names appear on the cover, Margaret Scorza has reviewed and corrected reports, coordinated the editing and production process, and contributed to the quality of the work in innumerable ways. She has been assisted by Eulalia Cabrera, who has interpreted findings, integrated material into reports, and has written report summaries. Patricia Fitzpatrick has spent many hours creating, correcting, and maintaining data files. Finally, Joseph Rivera has worked intensively to produce, correct, duplicate, and disseminate reports. Without their able and faithful participation, the unit could not have handled such a large volume of work and still produced quality evaluation reports.

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Project BITEC

New Utrecht High School

Location:	1601 80th Street Brooklyn, New York 11214
Year of Operation:	1984-85, second of a three-year funding cycle
Target Languages:	Italian, Chinese, Vietnamese, Spanish
Number of Participants:	386 Students
Principal:	Michael Russo
Project Coordinator:	Joseph Rizzi

I. INTRODUCTION

OVERVIEW

Project Bitec completed the second year of a three-year funding cycle. The project was designed to operate in three phases: the developmental phase (first year), the implementation phase (second year), and the evaluation phase (third year). This evaluation report focuses on the project's broad general objectives, as well as on those objectives specifically designed for the second year.

Project Bitec currently provides bilingual instruction, resources, and supportive services to 386 limited English proficient (LEP) students from Italian, Chinese, Vietnamese, and Latin American backgrounds. It is located at New Utrecht High School, in a residential area of Brooklyn.

The school has a long history of bilingual education, having offered the first high school bilingual program for Italian migrants in the United States (Project Impact). Project Bitec represents an expansion of those services to Chinese-, Vietnamese-, and Spanish-speaking students now enrolled at New Utrecht. According to the principal, the school's experience and success in providing bilingual services has attracted representatives from schools outside New York State who have visited New Utrecht in search of information and advice regarding bilingual education programs.

The central aim of Project Bitec is to enable its target population to master the English language as soon as possible, while continuing their education in content areas with the help of bilingual educational assistants. The project also attempts to provide a technical education that will enhance the students' ability to compete in the job market.

In order to meet these goals, Project Bitec offers courses in English as a second language (E.S.L.), bilingual instruction in mathematics, science, and social studies, and a selection of courses in three major strands: industrial arts, secretarial studies, and computer/technical studies. Multilingual curricular guides for courses in these special areas were proposed to be developed by the present second-year phase.

The project staff consists of a coordinator, a curriculum developer, a resource teacher, two consultants, two paraprofessionals, and one bilingual secretary. These

positions are entirely supported by Title VII funds. The project coordinator and the bilingual secretary share a small office which is frequented by other staff members, students, and teachers. Most administrative and curriculum-related tasks take place in a crowded corner of the project's resource room, located next to the coordinator's office. Students come to the resource room to receive individual instruction from paraprofessionals and resource teachers. In addition, this room is used for small-group instruction, generally in Chinese and Vietnamese.

The project coordinator is supervised by the assistant principal (A.P.) of foreign languages. In practice, however, the project coordinator is treated as an A.P. by the school principal. They are in direct communication, have a collaborative relationship, and share similar views with respect to project goals and performance. The project coordinator is invited to attend all cabinet meetings with the school's A.P.s.

Project Bitec has demonstrated its organizational effectiveness by its ability to decrease its dependency on Title VII funds. The New Utrecht High School's budget included $35,000 to support a teacher position for the program.

According to the principal, Bitec is often taken as a model by out-of-state school administrators initiating similar programs in their schools.

COMMUNITY AND SCHOOL SETTING

New Utrecht High School is located in the Bensonhurst section of Brooklyn, a residential, working class area of one-family and two-family houses and various commercial centers. The houses are well-preserved and most have well kept yards and gardens. The neighborhood has a large concentration of Italian-Americans, perhaps one of the largest in the U.S. However, because the school is located near various transportation networks, it attracts students from surrounding communities, such as Bay Ridge, Borough Park, and Sunset Park, where students of Asian, Hispanic, and other backgrounds reside.

The school principal indicated that because of the school's convenient location, its reputation for safety, and its high degree of ethnic integration, it attracts a large number of Asian students trying to escape the discrimination they have experienced in some schools in the Queens area.

New Utrecht has a total student body of 2,977. Of these, 57 percent are white, 19 percent Hispanic, 15 percent black, and 9 percent Asian. Of the total school register, 18 percent are students of low economic status as evidenced by their eligibility to receive free lunches. Forty percent of all New Utrecht students are at or above the appropriate grade level in reading ability.

The school building dates from 1925 and has a satisfactory external appearance. Its inside structure, however, bears the

signs of its age; poor painting, inoperative windows and shades, and occasionally bad lighting were encountered by a member of the evaluation team. The school has an indoor swimming pool and an outdoor baseball field for the enjoyment of all students.

II. STUDENT CHARACTERISTICS

Project Bitec serves 386 students from four different cultural backgrounds: Spanish (60 percent), Chinese (14 percent), Italian (14 percent), and Vietnamese (11 percent). The criteria for student selection include dominance in one of these languages, the results of interviews with students and parents, and the recommendations of feeder schools. In addition, eligibility depends on scoring below the twenty-first percentile on the English version of the Language Assessment Battery (LAB). A small number of students have scored above the twenty-first percentile on the LAB, but have encountered difficulties in mainstream content-area courses, and have been included in the program. Among these are some natives of Hong Kong who, despite their knowledge of English, experience difficulties.

Project students are, for the most part, children of semi-skilled and skilled workers. In some cases, parents run small businesses. Most students' parents are migrants who have a strong faith in the work ethic as the essential means to succeed in the U.S. Parents' beliefs are reflected in their tendency to encourage children to engage in early work experiences. Most project students have after-school jobs or household responsibilities. In some cases, the student's supplemental income is needed for the survival of the household. In most cases, parents encourage employment and de-

emphasize the importance of education because they view a job as the best way to succeed.

When interviewed by a member of the evaluation team, staff members stated that because of work activities, students are often too tired to concentrate in class, fail to comply with homework assignments, and are often encouraged to drop out before graduation.

Some parents come from small communities and profess an extremely conservative moral ethic. Girls are more likely to suffer its effects than boys; however, both are likely to be restricted from participation in extracurricular activities, field trips, and school dances aimed at promoting cultural and social interaction. One case reported by the project coordinator involved a female student of Italian background whose parents strongly resisted her continuing in school after her brother's graduation. In these cases, the family paraprofessional tries to convey to parents the importance of education and of delaying their child's early exit from school.

Some students, particularly those from Vietnam and Cambodia, have experienced terrifying events in their childhood, and are currently experiencing a lack of concentration and overall low school performance. The case of a Vietnamese student who witnessed the murder of her parents and the suicide of her uncle illustrates this problem. The student was described by the guidance counselor as intelligent and hard working but lacking the ability to concentrate in

class. Project staff solved many of these student problems; they demonstrated care and understanding.

All students participating in the bilingual program were described by the school principal as hard working and devoted to learning. They "provide a good example," for mainstream students. According to the project coordinator, students of Asian backgrounds show a high regard for school, and view school success as an essential vehicle for upward mobility.

A small group of students are illiterate in English and in their native language. The school principal estimated that approximately 10 students were in this group during the current semester. They have problems of adjustment, and are more likely to drop out of school than other project students.

Tables 1 through 3 present the Bitec students by country of birth, sex and grade, and age and grade, respectively. According to the project director, only one student was new to the program; the rest had been in the program for two years.

TABLE 1

Number and Percent of Program Students by Language and Country of Birth

Language	Country of Birth	Number	Percent
Spanish	United States	143	37
	Puerto Rico	29	8
	Dominican Republic	10	3
	Cuba	2	Less than 1
	Central and South America	45	12
	Unknown	2	Less than 1
Italian	Italy	40	10
	United States	14	4
Asian Languages	Vietnam	44	11
	People's Republic of China	36	9
	Hong Kong	16	4
	Other Asian	4	1
	United States	1	Less than 1
TOTAL		386	100

- Sixty percent of all program students are native speakers of Spanish. Over one half of the students in this group were born in the United States. The next largest subgroup (12 percent) was born in Central and South America.

- The second largest group of program students are Italian speakers (14 percent). A majority of the students in this group are from Italy, followed by those born in the United States.

- The third group is comprised of students who were born in various Asian countries (25 percent). They include speakers of Cantonese (10 percent), Vietnamese (8 percent), and Mandarin (7 percent).

TABLE 2

Number and Percent of Program Students by Sex and Grade

Grade	Number Male Students	Percent of Grade	Number Female Students	Percent of Grade	Total [a] Number	Percent of all Students
9	23	40	34	60	57	15
10	67	49	71	51	138	36
11	59	49	62	51	121	32
12	31	46	37	54	68	18
TOTAL	180	47[b]	204	53[b]	384	100

[a] Data were missing for one male and one female student.

[b] Percent of program students.

- Female students outnumber male students in all grades.
- The greatest proportions of students (36 percent and 32 percent, respectively) are in grades ten and eleven.

TABLE 3

Number of Program Students by Age and Grade

Age	Grade 9	Grade 10	Grade 11	Grade 12	Total
13	1	0	0	0	1
14	7*	1	0	0	8
15	13*	29*	4	0	46
16	16	48*	24*	4	92
17	11	30	49*	14*	104
18	5	19	29	31*	84
19	2	7	9	13	31
20	0	1	2	3	6
21	0	0	0	3	3
22	0	0	2	0	2
TOTAL	55	135	119	68	377
Overage Students					
Number	34	57	42	19	152
Percent	62	42	35	28	40

*Expected age range for grade.

- Forty percent of the program students are overage for their grade placement.
- The highest percentage of overage students is in grade nine (62 percent), and the proportion of overage students decreases as grade increases.

III. FINDINGS

The evaluation findings for the 1984-85 academic year include objectives measured by standardized tests results, and those assessed on the basis of examination of program records, site visits, classroom observations, and interviews with program and school personnel. Following are the general program objectives and those specifically formulated for the present year as proposed to and accepted by the Office of Bilingual Education and Minority Languages Affairs, U.S. Department of Education.

ENGLISH AS A SECOND LANGUAGE

-- As a result of participating in the program, students will show significant gains in English reading achievement.

E.S.L. instruction was offered on five levels in the fall semester and four in the spring. Classes met five periods each week and aimed to develop the students' listening, speaking, reading, and writing abilities in English. In addition, four levels of speech lab classes were available in the fall semester and three in the spring. These aimed to develop the students' fluency, the acquisition of native-like accents, intonation, and good speech patterns.

A beginning E.S.L. class was observed by a member of the evaluation team. Attendance at this class was 96 percent of the total enrollment. The objective of the lesson was to develop the students' ability to distinguish the difference in meaning between words that sound similar. The class was

entirely conducted in English. The teacher lectured and asked questions approximately 50 percent of class time. The remainder of the period was devoted to grammar/phonetic exercises; first as a whole group following instructions displayed on the blackboard, later individually by doing written assignments on mimeographed sheets. The teacher then walked around the classroom providing individual attention to students, and checked on their specific needs.

The class was composed of Chinese, Italian, Vietnamese, and Spanish speakers. Occasionally students engaged in peer interaction in their native tongues, distracting from the lesson and requiring the teacher to reestablish order. The degree of students' attentiveness varied. Most students appeared task oriented, involved, and curious. A small group was totally distracted and managed to complete their individual tasks by copying from a classmate. This behavior was undetected by the teacher, who was occupied by the questions and needs of the more interested students.

Student Achievement in E.S.L.

The assessment instrument used for measuring achievement in this area was the Stanford Achievement Test (SAT) Form B, level III. The SAT was administered in the fall and spring. Because the program tests out-of-level, the analysis was based on raw scores gains rather than on standard score gains. The results are presented in Table 4. Of all students taking E.S.L. (levels 1 through 5), complete data on both tests were

available for 154 program students (42.3 percent).

Statistical significance of the mean gain was determined through the correlated t-test model to demonstrate whether the mean gain is larger than would be expected by chance variation alone. To provide more descriptive information, the table also includes the proportion of students making gains.

Examination of Table 4 reveals that 28 percent of the students made significant gains on the Stanford Achievement Test. For the rest of the students, posttest scores were significantly lower than pretest scores. The program objective was therefore not achieved.

The project director reported that these results were due in part to the students' indifference to a test to which they have been repeatedly exposed, and the fact that they are aware that their score will not affect their grades.

TABLE 4

English Reading Achievement
Results of the Stanford Achievement Test (SAT)

Number of Students	PRETEST Mean	PRETEST S.D.	POSTTEST Mean	POSTTEST S.D.	GAIN Mean	GAIN S.D.	Proportion Making Gains
154	113.9	30.2	109.1	27.9	-4.8*	20.0	28

*statistically significant at the .05 level

- Twenty-eight percent of the students made significant gains on the SAT.

NATIVE LANGUAGE ARTS

-- At least 70 percent of the students participating in the program will score at or above the 65 percent passing criterion on teacher-made examinations in Vietnamese, Chinese, Spanish, or Italian.

According to the project proposal, the aim of native language instruction is to foster pride in the students' own culture and to increase their chances for success in the business and/or professional world where bilingual competency is increasingly valuable.

The number of native language arts (N.L.A.) classes offered during the present year was in proportion to the students' ethnic distribution. Four Spanish courses, two Italian, one Chinese, and one Vietnamese language course were offered in the fall. Three Spanish language courses and one course in each other language were offered in the spring.

Italian and Spanish N.L.A. courses provide the student with a survey of literature and advanced grammar. Chinese and Vietnamese classes consist of composition and native language arts development. Because of the unavailability of licensed Chinese and Vietnamese personnel in New York City, courses in these two languages are taught by non-licensed consultants with the approval of the Board of Education. While these consultants are well prepared and provide excellent services to the students, there is general agreement among staff members that additional personnel is still needed to satisfy the needs of the Asian students. Italian and Spanish N.L.A. courses are taught by teachers with appropriate licenses in those areas.

A member of the evaluation team observed an Italian N.L.A. class. Attendance was approximately 85 percent of total enrollment. Two of the four students absent were reported to be attending individual classes in the resource center, one engaged in independent study, another receiving the assistance of a paraprofessional.

The class was conducted entirely in Italian, although the teacher occasionally used English. The objective of the lesson was the reading, understanding, and literary analysis of Italian prose. Students read literary pieces aloud, followed by the teacher's questions. Student participation was high.

The class atmosphere was relaxed and task oriented. Students' behavior was orderly and disciplined to a higher degree than in other bilingual classes observed by the evaluation team. The students were attentive, showed great interest in the subject matter, and sustained concentration throughout the entire period. The teacher reported that approximately 30 percent of the students are illiterate in both English and in their native language, but with a better speaking command of English than Italian.

Student Achievement in Native Language Arts

Table 5 presents students' passing rates in each of the four language components of the program. Overall, the program objective of a 70 percent passing rate was achieved by all language groups.

TABLE 5

Passing Rates in Native Language Arts Courses by Language and Semester

	FALL		SPRING		TOTAL
Language	Number of Students	Percent Passing	Number of Students	Percent Passing	Overall Passing Rate
Italian	55	78.2	42	66.7	73.2
Spanish	224	75.4	177	80.2	77.5
Vietnamese	29	86.2	26	84.6	85.4
Chinese*	73	93.0	68	91.2	92.2

*includes Mandarin and Cantonese

- The program objective of a 70 percent passing rate was achieved by all language groups.

CONTENT-AREA SUBJECTS

-- As a result of participating in the program, the percentage of students enrolled in content-area courses offered bilingually passing New York Regents examination and/or teacher proposed tests will be equal statistically to the percentage of mainstream students passing in mathematics, science, social studies, industrial arts, secretarial studies, technology/computers.

Specific objectives for the second year:

-- Students in the computer strand will be given a special course in Fundamentals of Computer Science. As a result of this course, 70 percent of the students will be able to write a two-page program in Basic computer language and input data at a rate of 15 records per minute.

-- Students in the secretarial strand will be given a special course in typing and stenography. As a result of these courses, 70 percent of the students will be able to type at a rate of 45 words per minute and take shorthand at a rate of 80 words per minute.

-- Students in the industrial strand will take a basic course including workshop, metalshop, and basic electricity. As a result of this course, 70 percent of the students will be able to identify and build series and parallel circuits.

Table 6 presents the bilingual content-area and specialized courses offered by the program during the fall and spring semesters. It must be pointed out, however, that although these courses are available to bilingual students, some are taught by monolingual English-speaking instructors, aided by bilingual paraprofessionals and student-tutors.

The project has been able to fulfill some of its instructional needs in these classes by recruiting the school's content-area teachers who coincidentally speak Italian or Spanish. However, the project coordinator reported that these teachers are not sufficient to cover the program needs. He

TABLE 6

Bilingual Content-Area and Special Interest Courses[a]

Course Title and Level	No. of Classes	Total Register	Title VII Register	No. Classes with para-professionals
Fall Semester				
Global Studies	4	152	152	4
American Studies	1	11	11	1
Economics	2	57	57	2
Stenography II	2	66	45	2
General Biology I	4	169	169	2
General Biology II	1	14	14	1
General Science	1	45	45	1
Woodworking	1	34	34	1
Pre-engineering Draft	2	68	68	2
Jewelry	2	46	46	1
Algebra	1	15	15	1
Computer I	2	21	21	1
Computer II	1	21	4	1
Computer III	1	20	1	1
Math Fundamentals	1	50	50	1
Math Lab	1	41	26	1
Spring Semester				
General Science	1	22	22	1
General Biology	4	93	93	3
American History I	4	120	120	1
American History II	2	64	64	1
American History III	1	24	24	1
Jewelry	3	112	68	3
Pre-engineering Draft	2	68	68	2
Woodworking	1	34	34	1
Stenography II	1	66	45	1
Advanced Drafting	1	20	20	1

[a] English was used approximately 70 percent of the time.

stated that the difficulty in finding licensed bilingual teachers in the content areas is one of the main problems yet unresolved by the project.

A bilingual American history class was observed by the evaluation team. Class attendance was 80 percent of the total enrollment. Of the 35 students present, 50 percent were Italian-speaking and 50 percent were Spanish-speaking. Students grouped themselves by native language, and sat around their respective bilingual paraprofessional on each side of the room. The Italian paraprofessional was observed aiding two students sitting next to her. These students were later described as Italian recent immigrants who knew practically no English and thus needed much individual assistance.

The Spanish-speaking paraprofessional was not only answering language-related questions, but was trying to establish order. In general, there was an atmosphere of restlessness, lack of interest in the subject matter, and frequent disruptions that often made the teacher's task difficult. Although this arrangement may seem to be a reasonable solution to the lack of bilingual teachers, its effectiveness appeared doubtful to the evaluation team.

In some cases, content-area classes are taught by licensed teachers with an excellent command of the students' native language. A biology course observed by a member of the evaluation team was one such class. This course was taught bilingually in English and Spanish, using English about 70 percent of class time. The teacher used Spanish to praise

student performance, to provide explanations, and to make sure everyone was following the subject matter. Students used English to ask questions, but often switched to Spanish for complicated explanations. They seemed to make great efforts to express themselves in English but felt more comfortable returning to Spanish when difficulties arose. They frequently asked for translations from the teacher, who readily responded to their needs.

The class objective was the study of the role of D.N.A., the nature of genes, and the formation of different blood types. Participation was extremely high, with students frequently asking questions, volunteering answers, and writing answers on the blackboard. It is interesting to note that this was a restless group of students, prone to joking and to disruptive behavior. Yet, the teacher's knowledge of Spanish and of Hispanic-American cultural idiosyncracies allowed him to skillfully control students' behavior. Jokes were often turned into instructional tools, and discipline was maintained without the need for authoritarian imposition.

An alternative method used to cope with the unavailability of bilingual content-area teachers is the use of paraprofessionals and peer-tutors or aides. The latter are bilingual students who have volunteered to assist teachers and paraprofessionals by translating whenever necessary. This system appears particularly useful in vocational courses such as jewelry and woodworking, where students engage in "hands-on"

tasks and instruction does not require lengthy and abstract lectures.

A jewelry class was observed by a member of the evaluation team. About 50 percent of the class was composed of Spanish-speaking project students, and 50 percent of mainstream students. When interviewed, bilingual students stated that they had no problems in understanding the subject matter. They appeared interested and placed a high value on the creative nature and marketability attached to the skills they were learning. Some students enthusiastically showed the observer how to make a piece of jewelry, from design to completion.

One student had recently arrived from a politically troubled Latin American country. His studies had been interrupted by his family's migration to the United States. In an interview he said he found the bilingual program very helpful; it had enabled him to learn English while also advancing in other high school subjects. Although he still "missed his native country," he felt he had found a friendly atmosphere at New Utrecht, and looked forward to his future in his new homeland.

Attendance at this class was reported by the teacher as remarkably higher for program than for mainstream students. Approximately 35 percent of the total enrollment were absent in the session observed. Most of those absent were composed of mainstream students.

A computer class containing Italian and Vietnamese

students, was informally observed by a member of the evaluation team. The instructor was bilingual in Italian and English, and books on computer science in Italian, along with other materials were available in the classroom. The project coordinator stated that although presently only a few students have been able to enjoy the benefit of computer instruction, it is expected that these services will be expanded during the coming academic year.

Student Achievement in Content-Area Subjects

Since the objective in this area required that program and mainstream students be measured on similar courses, a comparison was made using a sample of such courses with information provided by the project director.

Table 7 presents students' achievement on teacher-made tests in mathematics, science, social studies, industrial arts, and secretarial studies. The percentage of program students passing these courses is equal to or greater than that of mainstream students in all courses, except in industrial arts in the spring semester. Overall, the program objective was achieved.

TABLE 7

Passing Rates for Program and Mainstream Students in Content-Area Courses

Course	BILINGUAL PROGRAM		MAINSTREAM CLASSES	
	Number of Students	Percent Passing	Number of Students	Percent Passing
		FALL		
Mathematics	8	75.0	20	65.0
Science	21	95.0	36	95.0
Social Studies	21	95.0	16	75.0
Industrial Arts	14	86.0	18	78.0
Secretarial	8	87.5	29	65.5
		SPRING		
Mathematics	25	60.0	28	50.0
Science	20	65.0	27	48.0
Social Studies	31	84.0	29	79.0
Industrial Arts	10	60.0	17	65.0
Secretarial	11	100.0	20	90.0

- Overall, the program objective was achieved; the percentage of students passing these courses is equal to or greater than that of mainstream students.

For descriptive purposes, Table 8 presents the overall passing rates of all program students enrolled in content-area and special interest courses. Passing rates were highest in secretarial and technology/computer courses, and lower in industrial arts. There was an increase in passing rates from fall to spring in all areas except in secretarial studies. There was also a decrease in the number of students enrolled in these courses from fall to spring.

TABLE 8

Passing Rates of Program Students in Content-Area and Special Interest Courses

	FALL		SPRING		TOTAL
	Number of Students	Percent Passing	Number of Students	Percent Passing	Overall Passing Rate
Math	346	63.6	268	72.8	67.6
Science	280	61.1	178	71.3	65.1
Social Studies	366	68.0	290	75.2	71.2
Industrial Arts[a]	96	59.4	58	72.4	64.3
Secretarial[b]	105	78.1	92	77.1	77.6
Tech/ Computer[c]	1	0.0	12	83.4	77.0
TOTAL		65.3		73.8	69.0

[a] Includes electrical shop, wood shop, metal shop, drafting, and vocational electives.

[b] Ranges from career orientation to business experience.

[c] Includes computer math.

- Passing rates were highest in secretarial and tech/computer courses.
- There was an increase in passing rates from fall to spring in all areas except in secretarial studies.

Student Achievement of Second-Year Objectives

Table 9 presents the passing rates for program students in fundamentals of computer, secretarial studies, and industrial arts courses each semester. A weighted average was also computed for the year.

Examination of Table 9 reveals that the objective of a 70 percent passing rate for students enrolled in these courses was achieved both semesters.

TABLE 9

Passing Rates in Computer Science, Typing, and Stenography and Selected Industrial Arts Courses

	FALL		SPRING		TOTAL
Content Area	Number of Students	Percent Passing	Number of Students	Percent Passing	Overall Passing Rate
Fundamentals of Computer Science	1	0.0	12	83.4	77.0
Typing/Stenography Studies	79	73.4	58	82.7	78.9
Workshop, Metal Shop, Electricity and Basic Arts	14	77.7	15	65.2	70.7

- Overall, the objective of 70 percent passing was achieved and surpassed in all areas.

ATTENDANCE AND DROPOUT

-- As a result of participating in the program students' attendance will be equal to or greater than that of mainstream students.

-- As a result of participating in the program, the percentage of students dropping out will be less than that of mainstream students in the school and in New York City.

Project Bitec has included in its non-instructional component a number of supportive strategies aimed at maximizing the students' involvement with the program, as well as raising their overall aspiration levels. These strategies are related to the students' lower attrition and better attendance rates.

The bilingual guidance counselor and bilingual paraprofessionals maintain direct contact with students and their families, and are familiar with their needs and concerns. Paraprofessional visits often prevent students from leaving school by providing understanding and active support in the resolution of their problems. In some cases, early dropout has been avoided by finding the student summer or part-time jobs that alleviate their financial needs without interfering with school activities.

Other supportive strategies indirectly related to attendance and dropout rates are those geared to raising students' aspirations and achievement, pride in the native heritage, and ethnic integration. One example is the International Career Day held during the spring semester. This celebration was attended by students, parents, staff members, and teachers. Important public figures and professionals who

share the students' backgrounds were invited as speakers. A list of contacts such as the Chinatown Planning Council, the Italian Chamber of Commerce, and news media (Il Progresso and La Prensa) are kept for this purpose. According to the project coordinator, students' contact with community leaders from their own ethnic background has been instrumental in increasing their self-esteem and the desire to achieve.

An important feature in promoting ethnic integration is a club that enables participants to enjoy social interaction and to expand their knowledge of each other's cultures. The club also sponsors special festivals to celebrate holidays such as Christmas, Oriental New Year, and Dia de la Raza. It also publishes a magazine that provides a showcase for the students' talents as well as educational information on ethnic issues.

Attendance Outcomes

Since the school's attendance rate includes the attendance of program students, statistical significance between program and school attendance was determined through the application of a z-test for the significance of a proportion.* This procedure tests whether the difference between one proportion (the program's attendance) and a standard proportion (the school's attendance) is greater than can be expected by chance variation.

*Brunning, J.L. and Kintz, B.L.; Computational Handbook of Statistics; Scott, Foresman and Company, 1968.

The attendance rate for program students was 81.14 percent, 7.2 percentage points above the schoolwide attendance rate (73.94 percent). The z-test results (z=3.20) indicated that the difference in attendance rates is statistically significant (p:<.05). The program objective was thus met.

Dropout

According to information reported by the project director, of the 166 students who left the program during the academic year, 34 (20 percent) were reported as "dropouts." The remainder were either fully mainstreamed or graduated (see Table 10).

The dropout rate for program students was 8.8 percent. The dropout rate for mainstream and New York City schools' students was 9.9 percent and 9.4 percent, respectively. A t-test for the significance of a proportion confirmed that the dropout rate of program students did not differ significantly from those of mainstream and New York City schools' students. Thus, the objective was not met.

TABLE 10

Number of Students Leaving the Program

Reason for Leaving	Grade 9	Grade 10	Grade 11	Grade 12	Total
Fully mainstreamed	15	40	29	6	90
Transferred to another school	1	0	1	0	2
Graduated	0	1	0	38	39
Dropout	7	15	7	6	35
TOTAL	23	56	37	50	166

- Of the 166 students who left the program, 90 (54 percent) were fully mainstreamed.
- Thirty-five students (21 percent) dropped out, and 39 (23 percent) graduated.

CURRICULUM DEVELOPMENT

Project Bitec proposed to develop curriculum guides for the target population in each of the following areas:

Computer	1) fundamentals of computer science 2) computer programming in Basic language 3) computer programming in Microsoft Basic language.
Secretarial	1) keyboarding 2) bilingual typing 3) bilingual stenography 4) bilingual transcription 5) word processing
Industrial	1) electronics and circuitry 2) architectural drafting 3) building trades

The project aims to provide its students with bilingual technical training which will enhance their opportunities to compete for attractive, well-paid jobs. The curriculum specialists have successfully achieved their objective of developing guides for courses in computer and secretarial studies in all target languages, and are in the process of completing multilingual curricula for courses in industrial arts. In all cases the developed curricula parallel that of mainstream courses.

STAFF DEVELOPMENT

-- As a result of participating in the program, the staff will receive in-service training through workshops given by the teacher trainer and will improve their pedagogical skills as well as acquiring a better understanding of cultures, languages and needs of the target group students and their families.

-- As a result of participating in the program, the staff will be required to attend a minimum of one bilingual conference per year.

Project staff members appear to be extraordinarily dedicated, taking an interest in the students above and beyond their contractual responsibilities. All staff members attend university courses aimed at improving their usefulness to the project and, when interviewed, stated that tuition sponsorship was a very stimulating feature of their job.

The project coordinator and staff members attend monthly meetings and workshops as part of the ongoing process of educating LEP students. Workshops deal with the linguistic and intercultural aspects of the educational process. In addition, the project coordinator holds ongoing daily discussions with bilingual teachers and staff on pedagogical strategies and educational issues.

Bilingual teachers attend monthly meetings and workshops. They maintain frequent contact with the school principal, who evaluates their performance. Untenured teachers are supervised and evaluated by an assistant principal six times per year.

PARENTAL INVOLVEMENT

-- As a result of the program, the percentage of parents participating in school activities will be equal to or greater than the percentage of parents of mainstream students.

The project is aware of the need to reach out to students' families, and has made parental involvement one of its non-curricular objectives. As previously stated, this is particularly important for those parents who do not view schooling as necessary for upward mobility.

According to staff members, the rate of parental participation is low due to many factors. Most parents have full-time jobs which leave them little time to attend school activities. Reportedly, many feel intimidated by the school environment. Some are distrustful of extracurricular activities and are reluctant to participate.

The project has counteracted these problems through the direct involvement of the family paraprofessionals and through frequent mail and telephone contacts with parents. A Telsol machine, with a recorded message is often used to extend invitations and to announce school activities to parents. They are invited to all festivals where ethnic foods and crafts are featured. However, the project coordinator stated that these efforts have not been enough to attract parents and increase their involvement in school activities.

IV. CONCLUSIONS AND RECOMMENDATIONS

Project Bitec is a successful program that provides needed services to its target students. In addition to E.S.L., native language arts, and bilingual content-area courses, the project offers a selection of technical/vocational strands aimed to facilitate the successful integration of students with the occupational structure.

Through instructional and non-instructional supportive services, Project Bitec enables the rapid acclimation of young migrants to the U.S. language and culture, and contributes to their becoming proud and useful citizens.

Although the project still has been unable to identify certified personnel to fulfill all its needs, it has made great progress in providing the services proposed in its plan. Courses in E.S.L., native language arts, and most content areas are taught by licensed teachers. The project coordinator's enthusiastic and consistent recruiting efforts are, to a great extent, responsible for this success and will most likely continue to increase Bitec's effectiveness.

The program staff appeared competent, efficient, and highly sensitive to the students' problems. This sensitivity seems to be shared by most of the teachers and school administrators.

During the 1984-85 school year, the project was not able to achieve its objective for English reading achievement. This might have resulted from the use of an assessment instrument

that is inappropriate for the students' level of English proficiency. The project needs to investigate this situation, determine what instruments may be appropriate to measure the proficiency of students at varying levels, and revise its objective accordingly.

The program achieved its objectives in native language arts and content-area courses. Program students achieved passing rates comparatively higher than mainstream students in all areas. The objective of having a higher attendance for program than mainstream students was also achieved. Dropout rates, however, did not significantly differ from those of mainstream students.

The project enjoys the active support of the school administration. From the principal to teachers, program directives and objectives are clearly stated and harmoniously implemented.

Recommendations

The following recommendations are aimed at improving the overall effectiveness of the project.

Problems of discipline seemed greater in classes taught by monolingual English-speaking teachers with the assistance of bilingual paraprofessionals than in other bilingual courses observed by the evaluation team. Project Bitec should continue its efforts to fulfill its needs for certified bilingual teachers in content areas. Meanwhile, it is recommended that the project explore the effectiveness of alternative

instructional methods.

The project would benefit from larger work areas for the curriculum specialists and administrative staff. If possible, more space should be negotiated with the school administration, to free the resource room for instructional activities.

Project Bitec should investigate the appropriateness of the instrument being used to assess students' English reading achievement. If it is found to be inappropriate, the project should identify an instrument that is more appropriate to measure the proficiency of students at varying levels, and revise its objective accordingly.

Project Bitec should continue to promote parents' involvement in program activities. An alternative means to attract this difficult population might be to offer courses in E.S.L. and high school equivalency preparation.

Project Bitec does not systematically monitor its mainstreamed students. It is recommended that the program use already available information to enable the program to determine the effectiveness of its mainstreaming practice.